

Application Serial No. 101/083,443

Page 2 of 8

Date January 5, 2004

Reply to Office Action dated October 6, 2003

**Listing of the Claims:**

1. (Amended) A radiant heating system comprising a gas burner, a conduit connected to the burner on one end and connected to an exhaust tube at an opposite end for transporting a hot exhaust gas stream, the conduit including a hot spot the hot spot being located remotely from the burner and between opposite ends of the conduit, the radiant heating system comprising:

a fan positioned between opposite ends of the conduit adjacent the hot spot for cooling the external surface of the conduit; and

a controller for selectively controlling the gas burner.

2. (Previously presented) The improvement of claim 1 further comprising:  
a reflector operably associated with the conduit for reflecting infrared rays in a desired direction.

3. (Previously presented) The improvement of claim 2, wherein the fan is supported from the reflector and between opposite ends of the reflector.

4. (Previously presented) The improvement of claim 2, further comprising:  
the reflector having an aperture for allowing forced air from the fan to pass through the aperture in the reflector and cool the conduit.

5. (Previously presented) The improvement of claim 2, wherein the reflector is spaced from the conduit for reflecting the infrared rays in a desired direction.

6. (Previously presented) The improvement of claim 2 further comprising:  
a deflector operably connected to one side of the reflector for directing airflow from the fan to the conduit.

Application Serial No. 101/083,443

Page 3 of 8

Date January 5, 2004

Reply to Office Action dated October 6, 2003

7. (Previously presented) The improvement of claim 6, wherein the deflector further comprises a plurality of stationary guide vanes for directing airflow from the fan to a predetermined location on the conduit.

8. (Previously presented) The improvement of claim 1 further comprising:  
a temperature sensor for measuring the external surface temperature of the conduit and for signaling the controller to shut off the burner when the temperature on an external surface of the conduit approaches a predetermined maximum threshold.

9. (Previously presented) The improvement of claim 1 further comprising:  
a thermostat for signaling a controller to start and stop the gas burner.

10. (Previously presented) The improvement of claim 9, wherein the thermostat signals the controller to start the fan when starting the burner.

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11. (Previously presented) The improvement of claim 1, wherein the fan is positioned generally between opposite ends of the conduit for cooling the conduit by forced air convection.

12. (Amended) A radiant heating system comprising:  
a gas burner operable in response to a temperature sensor and a thermostat;  
a conduit in connection with the gas burner at one end and an exhaust manifold at an opposite end, the conduit transferring heat by conduction to an external surface of the conduit such that heat is radiated omnidirectionally as infrared rays, the conduit including a hot spot positioned remotely from the burner and between the ends of the conduit;  
a reflector operably associated with the conduit for reflecting infrared rays in a desired direction; and

Application Serial No. 101/083,443

Page 4 of 8

Date January 5, 2004

Reply to Office Action dated October 6, 2003

a fan for directing an airflow against the hot spot of the conduit for convective cooling of the hot spot of the conduit.

13. (Previously presented) The radiant heating system of claim 12, wherein the fan is positioned generally between opposite ends of the conduit for cooling the conduit by forced air convection; and

the fan is generally spaced from the reflector and between opposite ends of the reflector.

14. (Previously presented) The radiant heating system of claim 12, wherein the reflector has an aperture for allowing forced air from the fan to pass through and cool the conduit; and

the reflector is spaced from the conduit for reflecting the infrared rays in a desired direction.

15. (Amended) The radiant heating system of claim 12, wherein the [a] thermostat operably signals the controller to start the fan when calling for heat.

16. (Previously presented) The radiant heating system of claim 12 further comprising:

a temperature sensor for signaling the controller with a temperature limit switch to shut off the burner when the external surface of the conduit approaches a predetermined threshold temperature .

17. (Previously presented) The radiant heating system of claim 12 further comprising:

a deflector operably connected to one side of the reflector for directing airflow from the fan toward the conduit; and

Application Serial No. 101/083,443

Pag 5 of 8

Date January 5, 2004

Reply to Office Action dated October 6, 2003

the deflector further comprises a plurality of stationary guide vanes for directing airflow from the fan to a predetermined location on the conduit.

18. (Previously presented) A method for radiating heat comprising the steps of:  
operating a gas burner in response to a temperature sensor and a thermostat;  
radiating infrared rays omnidirectionally from a conduit having two ends,  
connecting the gas burner with an exhaust manifold, the conduit transferring heat by conduction to an external surface;

reflecting the radiated infrared rays from a reflector in a desired direction; and  
cooling the conduit with at least one fan located generally between opposite ends of the conduit for cooling the conduit by convection.

19. (Previously presented) The method of claim 22 comprising the steps of:  
starting a fan with a controller in response to a signal from the thermostat calling for the burner to ignite and produce heat;

blowing air through an aperture in the reflector from the fan to cool the conduit;  
and

directing airflow to a desired location with a deflector connected to one side of the reflector.

20. (Previously presented) The method of claim 22 further comprising the step of: shutting the burner off when the temperature sensed by the temperature sensor on the conduit approaches a predetermined maximum threshold.

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